

**What is claimed is :**

1. A method for transdifferentiating mesenchymal stem cells into neuronal cells, which comprises increasing the level of a basic helix-loop-helix (bHLH) transcription factor in the mesenchymal stem cells.  
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2. The method of claim 1, wherein the bHLH transcription factor are selected from the group consisting of neurogenin 1, neurogenin 2, neuro D1, MASH1, MATH3, E47, a mixture thereof and active fragments thereof.  
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3. The method of claim 1 or 2, wherein the step of increasing the level of the basic helix-loop-helix (bHLH) transcription factor in the mesenchymal stem cells is carried out by transducing the bHLH transcription factor or an active fragment thereof into MSCs and expressing same.  
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4. The method of claim 3, wherein the step of transducing the bHLH transcription factor or active fragment thereof into the mesenchymal stem cells is conducted by transducing the mesenchymal stem cells with a viral vector encoding the bHLH transcription factor or active fragment thereof.  
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5. The method of claim 1, which further comprises the step of adding forskolin, 5-azadeoxycytidin or a mixture thereof to the mesenchymal stem cells.
- 25 6. The method of claim 5, wherein forskolin is added in an amount of 10 to 30  $\mu\text{mol/l}$ .
7. The method of claim 5, wherein 5-aza-deoxycytidin is added in an amount of 5 to 30  $\mu\text{mol/l}$  before 3 to 10 days of forskolin addition.  
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8. The method of claim 1, which comprises culturing the mesenchymal stem cells in a medium supplemented with N2 supplement.
9. A pharmaceutical composition for cell therapy of a  
35 neurological disease, which comprises a therapeutically effective amount of the mesenchymal stem cells transduced with a bHLH transcription factor or the neuronal cells transdifferentiated therefrom.

10. The pharmaceutical composition of claim 9, wherein the neurological disease is Parkinson's disease, Alzheimer disease, Huntington's disease, amyotrophic lateral sclerosis, cerebral paralysis, brain ischemia or spine dysfunction caused by a traumatic injury.

11. The pharmaceutical composition of claim 9, wherein the neuronal cells are prepared by transducing the bHLH transcription factor into the mesenchymal stem cells and propagating or differentiating the mesenchymal stem cells under a suitable *in vitro* condition; or by propagating the mesenchymal stem cells, transducing the bHLH transcription factor into the mesenchymal stem cells and differentiating the transduced mesenchymal stem cells.

12. A kit for transdifferentiating mesenchymal stem cells into the neuronal cells, which comprises an expression vector encoding a bHLH transcription factor or an active fragment thereof.

13. The kit of claim 12, wherein the bHLH transcription factor is selected from the group consisting of neurogenin 1, neurogenin 2, neuroD1, MASH1, MATH3 and E47.

14. The kit of claim 12 or 13, which further comprises forskolin or 5-aza-deoxycytidin.